

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* ALAN L. FERGUSON, STEVEN W. O'NEAL,  
and DANIEL C. WOOD

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Appeal 2007-2436  
Application 10/016,785  
Technology Center 2100

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Decided: December 10, 2007

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Before LANCE LEONARD BARRY, ROBERT E. NAPPI, and SCOTT R. BOALICK, *Administrative Patent Judges*.

NAPPI, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 6(b) of the Examiner's rejection of claims 1 through 27.

We affirm-in-part.

## INVENTION

The invention is directed to a system to remotely update software files embedded in a machine (earth working machine). See page 1 and figure 1 of Appellants' Specification. Claim 1 is representative of the invention and reproduced below:

1. A system for updating software installed on a work machine, the work machine having at least one non-volatile memory for storing the software, comprising:
  - a remote data storage system for storing identifying information of said software;
  - a remote processor for monitoring said remote data storage system to determine if updates are available for said software; and
  - a remote communications system operably connected to said remote processor, said remote communications system receiving said available updates from said remote processor and relaying said available updates to said work machine for storage in said non-volatile memory.

## REFERENCES

Cantos	US 6,529,784 B1	Mar. 4, 2003
Hanson	US 5,517,434	May 14, 1996
Lee	WO 97/46932	Dec. 11, 1997

## REJECTIONS AT ISSUE

Claims 1 through 27 stand rejected under 35 U.S.C. § 103 (a) as being unpatentable over Cantos, in view of Lee and Hanson. The Examiner's rejection is set forth on pages 3 through 10 of the Answer.

Throughout the opinion, we make reference to the Brief (received December 14, 2005), the Reply Brief (received February 8, 2007) and the Answer (mailed December 8, 2006) for the respective details thereof.

## ISSUES

Appellants argue, on pages 11 through 26 of the Brief that the Examiner's rejection of claims 1 through 27 under 35 U.S.C. § 103 (a) as being unpatentable over Cantos, in view of Lee and Hanson is in error. Appellants' arguments group the claims into eight groups. Thus the issue before us with respect to each group is whether the Examiner erred in rejecting the claims under 35 U.S.C. § 103 (a).

## FINDINGS OF FACT

1. Cantos teaches a system for managing a network (or system) of computers. Col. 2, ll. 26-31.
2. Cantos' system is applicable to not only a computer but other processor based devices such as terminals, wireless, and Internet telephones. Col. 3, ll. 15-20.
3. The target computer system is monitored by an agent processor that communicates with the monitored computer system by a communications link. The link can be by wire, or wireless such as satellite, cellular or radio frequency. Col. 3, ll. 25, 36, 45-50.

4. Cantos' system also makes use of an alert engine which issues an alert message to the agents when a new software package or upgrade is available. Col. 6, ll. 12-25, 67, col. 8, ll. 17-18.
5. The agent may transmit messages to the target computer which require the user's attention such as an unsolicited software upgrade. Cantos, col. 8, ll. 44-55.
6. Some of these messages require further action by the user. An example is a message to the user that includes an option for the user to reply including an instruction to download and install the software patch. Cantos, col. 8, ll. 58-59, 67, col. 9, ll. 1-5.
7. Cantos' system is described as providing a service to which a customer must subscribe. The system also includes provisions for billing. Col. 10, ll. 23-28, 41-45.
8. Cantos does not describe the legal relationship between the user or customer and the property that makes up the target computer. However, one skilled in the art would recognize that the terms "user" and "customer" are broad terms that include the owner of the target computer.
9. Hanson teaches a data capture system which makes use of terminals. Abstract.
10. Hanson's terminals can be mounted in a work vehicle, such as a fork lift or delivery truck or farm tractor. Col. 6, ll. 5, 67, col. 17, ll. 46.

11. The terminal mounted in the work vehicle can be connected to a host computer to transfer data via a local area network (LAN) (i.e. the vehicle is connected to the LAN). Hanson, col. 6, ll. 41-45.
12. The communication between the vehicle mounted terminal and the host computer can be made by a radio frequency (RF) link using a RF device on the vehicle. Hanson, col. 7, ll. 5-12, see also fig. 4.
13. The vehicle mounted terminal may also be connected to vehicle related sensors (e.g. sensors that measure oil pressure, engine temperature, tachometer, and odometer). Hanson, fig. 4 and col. 17, ll. 7-18.
14. The data is transferred in both directions, i.e. from the terminal to the host computer and from host computer to the terminal. Hanson, col. 7, ll. 9-12.
15. The terminal includes a microprocessor and memory. Hanson, item 18-U2 fig. 18B, and item 18-U5 fig 185, col. 19, ll. 17, 20 col. 25, ll. 1-8.
16. The terminal also includes EPROM (electrically programmable read only memory) which contains control programming. Hanson, col. 17, ll. 48-51.
17. Lee teaches a system which allows for software on a computer to be modified (updated) from a remote location. P. 3, l. 26- p. 4, l. 5.
18. Lee teaches that the system can be used on many types of computers including personal assistants, palmtop, and laptop computers. P. 4, ll. 34-35.

19. Lee teaches that the computers contain a ROM that may be programmed. P. 6, ll. 36.

## PRINCIPLES OF LAW

On the issue of obviousness, the Supreme Court has recently stated that “the obviousness analysis cannot be confined by a formalistic conception of the words teaching, suggestion, and motivation.” *KSR Int’l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007). Further, the Court stated “[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *KSR Int’l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1739 (2007).

When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. . . . [A] court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions.

*Id.* at 1740. “One of the ways in which a patent’s subject matter can be proved obvious is by noting that there existed at the time of the invention a known problem for which there was an obvious solution encompassed by the patent’s claims.” *Id.* at 1742.

In analyzing the scope of the claim, Office personnel must rely on Appellants’ disclosure to properly determine the meaning of the terms used in the claims. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 980

(Fed. Cir. 1995). “[I]nterpreting what is *meant* by a word *in* a claim ‘is not to be confused with adding an extraneous limitation appearing in the specification, which is improper.’” (Emphasis original) *In re Cruciferous Sprout Litigation*, 301 F.3d 1343, 1348 (Fed. Cir. 2002) (citing *Intervet America Inc v. Kee-Vet Laboratories Inc.*, 887 F.2d 1050, 1053 (Fed. Cir. 1989)).

## ANALYSIS

Claims 1, 12, and 26.

On pages 11 through 15 of the Brief, Appellants present arguments directed to the rejection of claims 1, 12, and 26. As Appellants’ arguments have grouped these claims together, we select claim 1 as representative of the group. Appellants argue on page 11 of the Brief that claim 1 recites a work machine having non-volatile memory for storing software, a feature not taught by the combination of the references. Appellants argue on page 12 of the Brief that Hanson does not teach a work machine or updating software on a work machine, but rather a terminal that is removably connected to a vehicle data bus. Appellants state that the storage means in Hanson is contained in the data terminal which is not part of the work machine. On page 14 of the Brief, Appellants respond to a finding in the Examiner’s August 12, 2005 advisory action and state:

Here, the Examiner appears to suggest that the location of data terminal 300 in a vehicle provides the location a memory device that receives software updates while in the vehicle. This interpretation does meet the recitations of claims 1, 12, and 26, which each require

"updating software installed on a work machine, the work machine having at least one non-volatile memory for storing the software."

Appellants, qualify this admission on page 15 of the Brief by arguing that the claim should be interpreted in light of the Specification and that from Appellants' Specification, the claimed work machine with the non-volatile memory storing software is different from a hand held terminal carried onto and mounted in a receptacle of a vehicle. On pages 21 through 25 of the Brief, and pages 5 through 7 of the Reply Brief, Appellants argue that there is no motivation to combine the references as stated by the Examiner.

Appellants reason that nowhere does the Examiner show that Cantos and Lee disclose a suggestion to apply the teachings to a portable terminal in a vehicle and that these references are in no way directed to portable terminals in a vehicle. App. Br. 23, 25. Appellants also argue that Hanson teaches away from the combination. Rep. Br. 3-4. Appellants reason that Hanson is concerned with uploading data and does not disclose updating the software in the memory of the machine. Rep. Br. 4.

Appellants' arguments have not persuaded us of error in the Examiner's rejection. The Examiner finds that the combination of Cantos and Lee teaches a system for remote updating of programs in memory of portable electronic computer devices. Answer 11. We find ample evidence of record to support this finding, see Facts, 2, 4, 6, 18, and 19. Further, the Examiner finds that Hanson teaches a portable electronic device installed on a vehicle. Answer 12. The Examiner finds that Hanson's teaching that the vehicle may be a farm tractor, meets the claimed "work machine." We concur with the Examiner's finding.

Claim 1, recites “[a] system for updating software installed on a work machine, the work machine having at least one non-volatile memory for storing software.” Appellants’ Specification, on page 5 states:

For purposes of this disclosure, the present invention is described in connection with a remotely-located work machine, such as a track-type tractor, grader, paver, or the like. However, the present invention is equally well-suited for use with other equipment or machines having embedded software control and/or monitoring systems.

Thus, interpreted in light of the Specification a work machine is a vehicle to perform work. While we decline to import the specific examples given in the Specification in to the scope of the claim, we nonetheless note that a tractor by Appellants’ examples is a type of work machine. We find that Hanson teaches installing a terminal in a tractor (Fact 10), thus, we find that Hanson teaches a work machine within the meaning of the claim. Further, we note that claim 1 recites that the non-volatile memory as part of the work machine. As admitted by Appellants, on page 14 of the Brief, when Hanson’s terminal is in the cradle of the work machine, the components of the terminal are on the work machine and part of the work machine. We note that Hanson’s device when installed in the work machine interacts with sensors and other equipment on the work machine thus making it a part of the work machine. Facts 12 and 13. We note that Appellants’ attempts to differentiate Hanson’s device where the terminal is removable (i.e. portable) from the disclosed invention that is part of the machine is a difference that we do not find claimed.<sup>1</sup> The claim recites that the work machine has a

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<sup>1</sup> We note that Appellants’ inference, on page 15 of the Brief, that the claimed memory is part of the vehicle and can not be carried away as is the case with Hanson’s device is similarly not persuasive. Most if not all components of a vehicle can be removed to replace defective components, any difference between the remove ability of the Appellants’ disclosed

memory. We find that when Hanson's terminal is in the tractor, the tractor has a memory. Facts 10, 12, and 13. Thus, Appellants' arguments have not persuaded us that the combination of the references does not teach a work machine having non-volatile memory for storing software as recited in claim 1.

Further, Appellants' arguments have not persuaded us that the Examiner erred in finding that the combination of the references would be obvious. Initially, we note that Appellants in arguing, that the references do not provide suggestion for the combination, are asserting a strict application of the teaching, suggestion, and motivation test (TSM). The Supreme Court has discouraged such a strict application of the TSM test. *See KSR supra.* Nonetheless, we note that all three references involve portable terminals. Cantos and Lee both discuss the upgrade of software on computer devices which include portable machines such as terminals and palm top machines. Facts 2 and 18. Cantos teaches that similar terminals are installed in work machines. Fact 10. Thus, we consider that one skilled in the art would find that Cantos' and Lee's teachings directly apply to being used on terminals such as discussed in Hanson. Further, we find that Cantos and Lee teach that it was known to update software in the memory of portable machines (Facts 4 through 6 and 17) and we consider that applying these teachings to the system of Hanson which uses a similar terminal to be nothing more than combining familiar elements, according to known methods that yield the predictable result of allowing the software in the memory of the computer in the work machine to be upgraded. Accordingly, Appellants have not

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computer (and memory) system and that of Hanson is merely a question of degree.

persuaded us of error in the Examiner’s rejection of claim 1 and we affirm the Examiner’s rejection of claims 1, 12, and 26.

Claims 2, 13, and 27.

On pages 15 through 16 of the Brief, Appellants present arguments directed to the rejection of claims 2, 13, and 27. As Appellants’ arguments have grouped these claims together, we select claim 2 as representative of the group. Appellants argue on page 15 of the Brief that claim 2 recites notifying an owner of a work machine of an available update. Appellants reason that the combination of the references does not teach a work machine, thus the references can not teach that the owner of the machine is notified. Further, Appellants assert Cantos teaches notifying a user of the equipment that there is a software upgrade not the owner of the equipment as recited in claim 2. App. Br. 16.

Appellants’ arguments have not persuaded us of error in the Examiner’s rejection. Initially, we note as discussed above with respect to claim 1 we find that the combination of the references teaches a work machine having non-volatile memory for storing software. Claim 2 is dependent upon claim 1 and further recites that the system includes “an interface for notifying an owner of said work machine of said available update.” We find that Cantos teaches notifying a user that a software update is available. Facts 5 and 6. Appellants’ Specification provides no definition of an owner, or how the system determines who the owner of the equipment is. We apply the customary meaning of the term owner as a person who has legal rights to the equipment. We note that the customary meaning of the

term does not exclude an “owner” from also being a user of the device, (e.g. many people who own their car also use the car to drive to work, or in the context of the combination, a farmer who owns the tractor also uses the tractor to work a farm). We also construe this limitation as directed to the field of use. “An intended use or purpose usually will not limit the scope of the claim because such statements usually do no more than define a context in which the invention operates.” *Boehringer Ingelheim Vetmedica, Inc. v. Schering-Plough Corp.*, 320 F.3d 1339, 1345 (Fed.Cir. 2003). Although “[s]uch statements often . . . appear in the claim's preamble,” *In re Stencel*, 828 F.2d 751, 754, (Fed.Cir. 1987), a statement of intended use or purpose can appear elsewhere in a claim. *Id.* Here, Appellants’ claim is reciting the characteristics of a person notified as defining the difference between the claimed invention and the prior art. Thus, we consider the scope of the claim to present no distinction between a user and an owner. Nonetheless, we find that Cantos in disclosing that the system notifies the user does in fact teach notifying the owner, i.e. if the owner is using the device it will notify the owner of the device. Fact 8. Further, as discussed above with respect to claim 1 we are not persuaded by Appellants’ arguments concerning the Examiner’s rationale to combine the references. Thus, Appellants’ arguments have not persuaded us of error in the rejection of claim 2. Accordingly, we affirm the Examiner’s rejection of claims 2, 13, and 27.

Claims 3, 4, 14, 15, and 17.

On pages 16 and 17 of the Brief, Appellants present arguments directed to the rejection of claims 3, 4, 14, 15, and 17. As Appellants' arguments have grouped these claims together, we select claim 3 as representative of the group. Appellants argue, that as noted with respect to claim 1, the combination of the references does not teach a work machine or receiving updates in non-volatile memory of a work machine. App. Br. 16-17. Appellants argue on page 16 of the Brief that the combination of the references does not teach owner acceptance of a software update as recited in claim 3. Appellants reason that although Cantos discloses a process that allows a user to control download procedures and Lee teaches procedures that query a user prior to an upgrade, neither of the references teaches that the owner of the work machine is queried.

Appellants' arguments have not persuaded us of error in the Examiner's rejection. Initially, we note, as discussed above with respect to claim 1, we find that the combination of the references teaches a work machine having non-volatile memory for storing software. Claim 3 is dependent upon claim 2 and recites "wherein said interface allows said owner to communicate acceptance of said available update and wherein said available update is relayed to said work machine upon said owner communicating said acceptance." Thus, the scope of claim 3 includes that the owner can communicate acceptance of an update and the update is relayed to the machine. We construe the term "owner" in the same manner discussed above with respect to claim 2. We find that Cantos teaches notifying a user that a software update is available, which requires further action (acceptance of the update) and that the software is then downloaded. Fact 6. As discussed above with respect to claim 2, we consider the

recitation of a “user” in Cantos to meet the claimed “owner.” Further, as discussed above with respect to claim 1 we are not persuaded by Appellants’ arguments concerning the Examiner’s rationale to combine the references. Thus, Appellants’ arguments have not persuaded us of error in the rejection of claim 3. Accordingly, we affirm the Examiner’s rejection of claims 3, 4, 14, 15, and 17.

Claims 5 and 18.

On pages 17 and 18 of the Brief, Appellants present arguments directed to the rejection of claims 5 and 18. As Appellants’ arguments have grouped these claims together, we select claim 5 as representative of the group. Appellants argue, that as noted with respect to claim 1, the combination of the references does not teach a work machine or receiving updates in non-volatile memory of a work machine. App. Br. 17. Appellants also argue that claim 5 requires an electronic communication including a link to a web site allowing the work machine owner to communicate acceptance of the update. Appellants reason that though Cantos teaches querying a user, this query is not the same as an electronic communication with a link to a web site as recited in claim 5.

The Examiner in response finds that Cantos teaches a web server and that queries may be submitted through a web browser and a web server.  
Ans. 15.

Appellants have persuaded us of error in the Examiner’s rejection of claims 5 and 18. Claim 5 is dependent upon claim 4 and further recites “wherein said electronic message includes a link to a web site allowing said

user to communicate acceptance of said available update.” Claim 18, which is dependent upon claim 17, recites a similar limitation. As discussed above with respect to claim 3, we find that Cantos does teach notifying an owner of the availability of an update. While Cantos discusses that the communication may be communicated using a web browser, (col. 6, ll. 42) and that the communication may include an “option” for the update we do not find that Cantos teaches that the option is expressed as a link to another web site which allows the user to communicate acceptance of said update. While such a modification to Cantos might be obvious, the Examiner has not presented evidence on the record before us to support such a finding. Accordingly, we are persuaded of error in the Examiner’s rejection and reverse the Examiner’s rejection of claims 5 and 18.

Claims 6 and 16.

On page 18 of the Brief, Appellants present arguments directed to the rejection of claims 6 and 16. As Appellants’ arguments have grouped these claims together, we select claim 6 as representative of the group. Appellants argue, that as noted with respect to claim 1, the combination of the references does not teach a work machine or receiving updates in non-volatile memory of a work machine. Further, Appellants argue that the combination of the references does not teach a billing system operably connected to said remote processor for billing the work machine owner for an accepted update as recited in claim 6. Appellants reason that “[a]lthough *Cantos et al.* discloses a server that enables a customer to be charged for

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various downloading services, the customer is not a work machine owner.” App. Br. 18.

Appellants’ arguments have not persuaded us of error in the Examiner’s rejection. Initially, we note as discussed above with respect to claim 1 we find that the combination of the references teaches a work machine having non-volatile memory for storing software. Claim 6 is dependent upon claim 3 and further recites “a billing system operably connected to said remote processor for billing said owner for said accepted available update.” Appellants admit that Cantos teaches a billing system. We find that the facts support this admission. Fact 7. As discussed above with respect to claims 2 and 3, we consider the recitation of a “user” in Cantos to meet the claimed “owner.” Further, as discussed above with respect to claim 1 we are not persuaded by Appellants’ arguments concerning the Examiner’s rationale to combine the references. Thus, Appellants’ arguments have not persuaded us of error in the rejection of claim 6. Accordingly, we affirm the Examiner’s rejection of claims 6 and 16.

Claims 7, 8, 19, 20, 21, and 22.

On page 19 of the Brief, Appellants present arguments directed to the rejection of claims 7, 8, 19, 20, 21, and 22. As Appellants’ arguments have grouped these claims together, we select claim 7 as representative of the group. Appellants argue, that as noted with respect to claim 1, the combination of the references does not teach a work machine. Further,

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Appellants argue that the combination of the references does not teach a communications system.

Appellants' arguments have not persuaded us of error in the Examiner's rejection. Initially, we note as discussed above with respect to claim 1 we find that the combination of the references teaches a work machine having non-volatile memory for storing software. Further, we note that claim 7 does not recite a communications system. Nonetheless, we find that Hanson teaches that the terminal in the machine is connected to a communications system. Facts 12 and 14. Additionally, as discussed above with respect to claim 1 we are not persuaded by Appellants' arguments concerning the Examiner's rationale to combine the references. Thus, Appellants' arguments have not persuaded us of error in the rejection of claim 7. Accordingly, we affirm the Examiner's rejection of claims 7, 8, 19, 20, 21, and 22.

Claims 9, 10, 23, and 24.

On page 20 of the Brief, Appellants present arguments directed to the rejection of claims 9, 10, 23, and 24. As Appellants' arguments have grouped these claims together, we select claim 9 as representative of the group. Appellants argue that the combination of the references does not teach that terminals are affiliated with a remote communications system which relays updates to the work machine for storage in non volatile memory as recited in claim 9.

Appellants' arguments have not persuaded us of error in the Examiner's rejection. Claim 9 is dependent upon claim 1 and further recites

“wherein said remote communications system comprises wireless communications means.” Claim 1 recites that the remote communication system relays available updates to the work machine. Appellants’ Specification describes the wireless communication system as satellite or cellular which are well known technologies. Para. 23. Thus, we consider the scope of the claim to include a wireless communication system such as cellular, satellite, or equivalent system which allows communication of data that can be interpreted by a computer. We find that Hanson teaches that the terminal in the machine is connected to a radio frequency communications system to communicate data and we consider this to meet the claimed wireless communication system. Facts 12 and 14. Further, we note that Cantos teaches that the communication to the individual terminals can be via various communications methods including satellite, cellular, and radio frequency. Fact 3. Thus, contrary to Appellants’ arguments we find ample evidence to support the Examiner’s finding that the combination of the references teaches that the remote communications system comprises a wireless communications system and are not persuaded of error in the Examiner’s rejection. Additionally, as discussed above with respect to claim 1 we are not persuaded by Appellants’ arguments concerning the Examiner’s rationale to combine the references. Accordingly, we affirm the Examiner’s rejection of claims 9, 10, 23, and 24.

Claims 11, and 25.

On page 21 of the Brief, Appellants present arguments directed to the rejection of claims 11 and 25. As Appellants’ arguments have grouped these

claims together, we select claim 11 as representative of the group. Appellants argue that as discussed with respect to claim 9 the combination of the references does not teach terminals are affiliated with a remote communications system which relays updates to the work machine for storage in non volatile memory. Further, Appellants reason that the combination of the references does not teach using a satellite communication system.

Appellants' arguments have not persuaded us of error in the Examiner's rejection. Claim 11 is dependent upon claim 9 and recites "wherein said wireless communication system means is a satellite system." As discussed above, we find that the combination of the references teaches the wireless communication of claim 9. Further, as discussed above with respect to claim 9, we find that Cantos teaches a satellite based wireless communications system. Fact 3. Additionally, as discussed above with respect to claim 1 we are not persuaded by Appellants' arguments concerning the Examiner's rationale to combine the references. Accordingly, we affirm the Examiner's rejection of claims 11 and 25.

## CONCLUSION

Appellant's arguments have not persuaded us of error in the Examiner's rejection of claims 1 through 4, 6 through 17, and 19 through 27.

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Accordingly we affirm the Examiner's rejections of these claims under 35 U.S.C. § 103 (a).

However, Appellant's arguments have persuaded us of error in the Examiner's rejection of claims 5 and 18. Accordingly, we reverse the Examiner's rejection of these claims under 35 U.S.C. §103(a).

#### ORDER

The decision of the Examiner is affirmed-in-part.

1Regarding the affirmed rejection(s), 37 CFR § 41.52(a)(1) provides "Appellant may file a single request for rehearing within two months from the date of the original decision of the Board."

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

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AFFIRMED-IN-PART

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